

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 11

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte SAMI KIRIAKI, KRISHNASAWAMY NAGARAJ  
and KERRY C. GLOVER

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Appeal No. 1997-0583  
Application 08/368,680<sup>1</sup>

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ON BRIEF

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Before HAIRSTON, KRASS and LALL, Administrative Patent Judges.  
LALL, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection<sup>2</sup> of all the pending claims, 1 through 20.

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<sup>1</sup> Application for patent filed January 4, 1995.

<sup>2</sup> An amendment after the final rejection was filed [paper no. 6] and was entered in the record [paper no. 7].

The disclosed invention relates to a high speed FIR filter architecture with precise timing acquisition. The input to the filter is coupled to a master input of a master sample and hold circuit. A plurality of slave sample and hold circuits are coupled to the output of the master sample and hold circuit. The outputs of these circuits may then be used in the taps of a FIR filter by multiplexing the outputs to a plurality of multipliers in a round robin manner. A more precise sampling is achieved because all the sampling is controlled by a single master sample and hold circuit. The slave sample and hold circuits, consequently, need not be high speed circuits and need not have a precise sampling instant.

Claim 1 reads as follows:

1. An FIR filter having an output, comprising:

a plurality of multipliers, each of said multipliers including an output and a first multiplier input and a second multiplier input, each said first multiplier input receiving a coefficient signal representing an FIR coefficient;

a master sample and hold circuit including a master output and operable to sample a first input signal and hold the value of said first input signal on said master output for a first predetermined period of time;

a plurality of slave sample and hold circuits, each of

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said plurality of slave sample and hold circuits comprising a first slave input directly connected to said master output and a first slave output and operable to sample a master signal from said master output and hold the value of said master signal on said first slave output for a second predetermined period of time;

a plurality of multiplexers, each comprising a plurality of multiplexer inputs and a second output, ones of said second outputs each coupled to one of said second multiplier inputs, at least one of said plurality of multiplexer inputs of a first predetermined number of multiplexers coupled to a first output of a first one of said slave circuits; and

wherein the output of each of said multipliers is summed so as to form said output of said FIR filter.

The reference relied on by the Examiner is:

Lish	5,050,119	Sept. 17, 1991
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Claims 1 through 20 stand rejected under 35 U.S.C. § 103 over Lish and under obvious-type double patenting over claims 1 to 20 of S.N. 08/368,679.

Reference is made to Appellants' brief and the Examiner's answer for their respective positions.

#### **OPINION**

We have considered the record before us, and we will reverse the rejections of claims 1 through 20.

With respect to claims 1 through 20, the Examiner has failed to set forth a prima facie case of obviousness. It is

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the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the art, or by implications

contained in such teachings or suggestions. In re Sernaker, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983).

"Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." Para-Ordnance Mfg. v. SGS Importer Int'l, Inc., 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), cert. denied, 117 S. Ct. 80 (1996) citing W. L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

We first take claim 1. The Examiner states:

It is noted that Lish does not show: (1) the master & slave sample and hold circuits and (2) the actual coefficient signals. First, the "master & slave sample and hold circuits" are merely specific delays. Second, the actual coefficient signals are implicitly discussed from the Figures and the corresponding recitation. It would have been

obvious to a person having ordinary skill in the art at the time the invention was to design the claimed invention according to Lish's teachings because the reference is FIR filter having selected taps [sic] [answer, pages 2 to 3].

Appellants argue that the master sample and hold circuits are not mere specific delays. Furthermore, Appellants argue that claim 1 recites an input signal that is connected to a master sample and hold circuit whose output is connected to each of a plurality of [slave] sample and hold circuits [brief, page 4].

The Examiner, in response, contends that "the amended feature 'a plurality of slave sample and hold circuits, each of said plurality of slave sample and hold circuits comprising a first slave input directly connected to said master output and a first slave output and ... [for a second predetermined period of time]' [(instant claim, lines 8 to 12)] ... is old and well known in the art, e.g., see recorded reference, Hague '170, Figs. 2 and 5, the input  $x(t)$  is directly connected to sample and hold circuits" [answer, pages 4 to 5]. The Examiner also cites a portion of a book entitled: "Electronic Circuit[s], Digital and Analog" by Hold [sic, Holt] to allege that master

and slave sample and hold circuits are merely specific delays. These two references are not of record for this appeal and are not considered here.

We find nothing in Lish that resembles the configuration claimed in claim 1. In addition to the above limitation, Lish does not show the limitations: "a plurality of multipliers, each ... coefficient" (instant claim, lines 2 to 4) and "a plurality of multiplexers, each ... coupled to ... slave circuits" (instant claim, lines 13 to 16). The Examiner has not provided any specific arguments to the contrary. Therefore, we cannot sustain the obviousness rejection of claim 1 over Lish. For the same

reasons, we cannot sustain over Lish the obviousness rejection of claims 2 to 14 which depend on claim 1.

Next, we consider the independent method claim 15. It contains the limitations which correspond to those discussed above, namely, "supplying ... coefficient signals ... output" (instant claim, lines 2 to 3), "coupling an input signal to a master input of a master sample and hold circuit" (instant claim, lines 4), "directly connecting a master output ...

circuits" (instant claim, lines 5 and 6) and "multiplexing a plurality of slave sample and hold circuit output signals in round robin manner to at least two of said multipliers" (instant claim, lines 7 to 8). Therefore, for the same rationale as for claim 1, we cannot sustain the obviousness rejection of claim 15 and it's dependent claims 16 through 20 over Lish. Obvious-type Double Patenting Rejection

The Examiner states:

Claims 1-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending application Serial No. 08/368,679. Although the conflicting claims are not identical, they are not patentably distinct from each other because the scope of the invention are [sic, is] identical. It is noted that the master/slaver [sic, slave] features in the application are not essential features [answer, page 3].

Even though Appellants request that this rejection be held in abeyance until the claims in the two applications are in allowable form but-for this issue, we, nevertheless, agree with Appellants' second position on this issue, i.e., the instant claimed invention is not obvious in light of the claims of application S.N. 08/368,679 [brief, page 5]. None

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of the claims in S.N. 08/368,679 contains a feature involving the master/slave limitations which form the basis for the invention of this application and which appears in all the claims here. The mere assertion, without more, by the Examiner that master/slave features are not essential features does not negate the claimed invention. Thus, we do not sustain the obvious-type double patenting rejection of claims 1 to 20 in this case.

In summary, we have not sustained the obviousness rejection of Claims 1 to 20 over Lish. We also have not sustained the obvious-type double patenting rejection of claims 1 to 20.

#### **DECISION**

The decision of the Examiner rejecting claims 1 through 20 under 35 U.S.C. § 103 over Lish, and over the judicially



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created doctrine of obvious-type double patenting is reversed.

**REVERSED**

	KENNETH W. HAIRSTON	)	
	Administrative Patent Judge	)	
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		)	
		)	
	ERROL A. KRASS	)	BOARD OF
PATENT	Administrative Patent Judge	)	APPEALS AND
		)	INTERFERENCES
		)	
	PARSHOTAM S. LALL	)	
	Administrative Patent Judge	)	

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